Feedback from the Conservation Biology (CB) Community Regarding Microbial control

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Ghosts of Biocontrol Past!

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What's for dinner?

- native insects, amphibians, and reptiles

Ghosts of Biocontrol Past!

Face flies vs. shrimp – what did you think we'd eat?

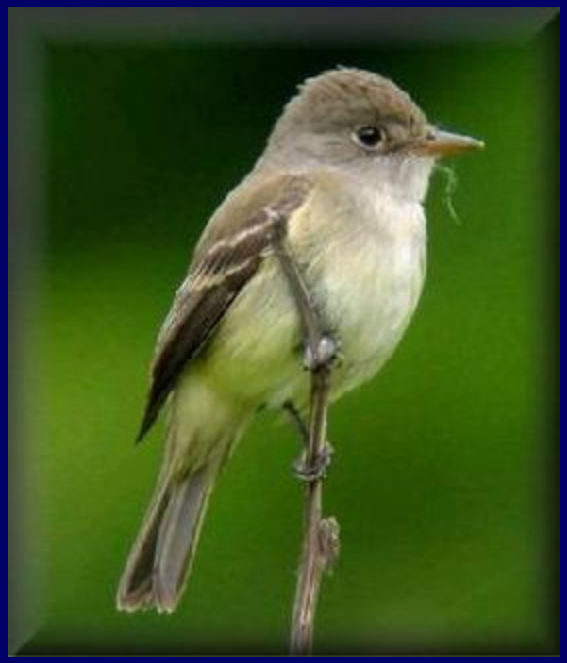
Ghosts of Biocontrol Present!

Fear no weevil!

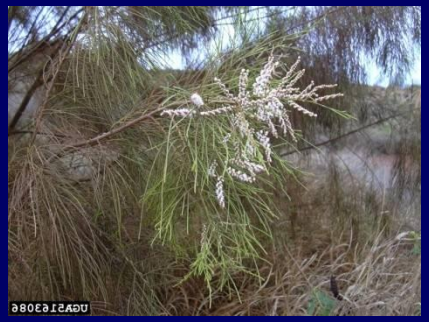
Ghosts of Biocontrol Present!

Ghosts of Biocontrol Present!

***Diorhabda elongata* on saltcedar.**



Southwestern willow flycatcher.



Athel tamarisk

Three part disharmony! Wildlife Management Institute.

Ghosts of Biocontrol Present!

Strange Days on Planet Earth! Irresponsible programming!

Feedback from the C B Community

- Many microbes are not super specific; BC agents have to be necessarily so.
- Microbes have so much potential to evolve -- w/ fast gen. times, high mutation rates, hybridization, horizontal gene transfer, etc. This has to be considered carefully.
- With microbes, one would anticipate faster adaptation to a new range or new hosts; hence risk assessment is critical.

Feedback from the C B Community

- There are very real risks associated with using microbial organisms as biocontrol agents, as with other types of BC agents.

- We need to be open and honest about these risks if we are to advance the field of microbial biological control.

- Any “perceived risk” should be acknowledged as a real risk and scientifically evaluated as to its risk factor (which can range from zero - no risk, to one - certain risk).

Feedback from the C B Community

- Evolution, adaption and dispersal are always going on.
- Hence, there is no such thing as “low” risk of unintended consequences.
- Unintended consequences are guaranteed to occur!!
- Therefore we must try to anticipate what they might be AND evaluate whether they are of sufficient ecological or social concern to contra-indicate the use of biocontrol as a tool.

Feedback from the C B Community

- The key to effectively using any tool is to have a full understanding of its capabilities and limitations.

- List of issues that need to be thoroughly explored before moving forward:
  - Host Specificity
  - Potential for host shifts
  - Mobility
  - Efficacy
  - Stability of new microbial agents
  - Indirect effects
  - Ecological replacement

Feedback from the C B Community

- Critical to monitor unintended impacts after release beyond those related to host-specificity.

- Monitoring of “failed” release agents should be done to determine if they are still in the environment and if so, what they are doing?

Feedback from the C B Community

- "Failure" for a BC agent has been traditionally defined as not accomplishing effective control of the target pest species.

- Another definition of failure should be serious unintended consequences or collateral damage resulting from the biocontrol agent release.

Feedback from the C B Community

- If we could improve the ecological approaches for evaluating risk and develop stronger partnerships we would have a better chance of improving the credibility and success of biocontrol programs.

Feedback from the C B Community

- Don’t blame regulatory agencies for regulating; They don’t have a choice!
- Target reform of regulations.
- Demonstrating a sound, comprehensive ecological approach and solid, committed partnerships would help provide the rationale for relaxing inappropriate or obsolete regulations.

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…..And now it's time for Panel Discussion:
Public issues/concerns regarding microbial biological control